

What is claimed is:

1. An interleave apparatus comprising:

conversion series creating means for creating at  
5 least one sequence conversion series using at least one  
element included in a sequence conversion rule  
expression stipulated for every input data item; and  
sequence changing means for changing the sequence of  
the input data using the created sequence conversion  
10 series.

2. The interleave apparatus according to claim 1, wherein  
the sequence changing means further comprises a first  
sequence calculating means for calculating the sequence  
15 of the changed sequence of the input data and changes  
the sequence of the input data according to the  
calculated sequence.

3. The interleave apparatus according to claim 1, wherein  
20 the sequence changing means further comprises a second  
sequence calculating means for calculating the sequence  
of the input data to be placed in this input data and  
changes the sequence of the input data according to the  
calculated sequence.

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4. The interleave apparatus according to claim 1, wherein  
the conversion series creating means creates a sequence  
conversion series, when one element included in the

sequence conversion rule expression is lower than the other element included in the expression by at least 1 stage, using the other element.

- 5 5. The interleave apparatus according to claim 1, wherein the sequence changing means changes the sequence of the input data whose sequence has been changed according to the sequence conversion rule expression.

- 10 6. A communication terminal apparatus equipped with an interleave apparatus, said interleave apparatus comprising:

conversion series creating means for creating at least one sequence conversion series using at least one  
15 element included in a sequence conversion rule expression stipulated for every input data item; and

sequence changing means for changing the sequence of the input data using the created sequence conversion series.

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7. A base station apparatus equipped with an interleave apparatus, said interleave apparatus comprising:

conversion series creating means for creating at least one sequence conversion series using at least one  
25 element included in a sequence conversion rule expression stipulated for every input data item; and

sequence changing means for changing the sequence of the input data using the created sequence conversion

series.

8. A radio communication system that performs communications between a communication terminal apparatus equipped with an interleave apparatus and a base station apparatus equipped with said interleave apparatus, said interleave apparatus comprising:

conversion series creating means for creating at least one sequence conversion series using at least one element included in a sequence conversion rule expression stipulated for every input data item; and

sequence changing means for changing the sequence of the input data using the created sequence conversion series.

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9. An interleave method comprising:

a conversion series creating step of creating at least one sequence conversion series using at least one element included in a sequence conversion rule expression stipulated for every input data item; and

a sequence changing step of changing the sequence of the input data using the created sequence conversion series.

25 10. An interleave method comprising:

a conversion series creating step of creating at least one sequence conversion series using at least one element included in a sequence conversion rule

expression stipulated for every input data item; and

a sequence restoring step of restoring the sequence of the input data whose sequence has been changed according to said sequence conversion rule expression using the created sequence conversion series.

[illegible]